Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Integrated Geometry Final Exam**

**Part 1: Multiple Choice - Numbers and Operations**

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| 1. | Estimate |
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| 2. | Simplify: 8.3 – (19 - 4)2 |
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| 3. | A company rents chairs for $6 per day. Last weekend, 245 chairs were rented from the company for  ***2 days each***. Which is the closest estimate of the total amount of money the company earned from the 245 chair rentals? |
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| 4. | What is the closest estimate for |
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| 5. | Simplify: –|–9| + (–y)2 |
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| 6. | Evaluate: 80 + 27 ÷ 3 – (–35) |
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| 7. | Simplify completely: |
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| 8. | What is the greatest common factor (GCF) of these monomials: |
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| 9. | When Steve exercises, he runs at an average rate of 3.75 miles every half hour. At this rate, how many miles can Steve run in 3 hours? | | | | | | | | | | | | | | | |
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| 10. | Simplify the expression: (-5x2)(4x4) | | | | | | | | | | | | | | | |
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| 11. | From a shipment of 600 batteries, a sample of 25 was selected at random and tested. If 4 batteries in the sample were found to be dead, how many dead batteries would be expected in the entire shipment? | | | | | | | | | | | | | | | |
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| 12. | An iPod battery loses **.**2 volts every 15 minutes. If the battery must be recharged when the voltage reaches 4**.**2 volts, and it is currently at 6.0 volts, how much time will pass before this battery needs to be recharged? | | | | | | | | | | | | | | | |
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| 13. | Express 8.31 x 10-5  in standard form. | | | | | | | | | | | | | | | |
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| 14. | Simplify: (2.6*x*103)× (5.5*x*10-3 ) | | | | | | | | | | | | | | | |
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| 15. |  | | | | | | | | | | | | | | | |
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| 16. |  | | | | | | | | | | | | | | | |
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| **Part 2: Multiple Choice - Measurement** | | | | | | | | | | | | | | | | |
| 17. | What is the volume of this container to the *nearest tenth* of a cubic inch? | | | | | | | | | | | | | | | |
| 4 m | | | | | | | | | | | | | | | | |
| 18. | Calculate the volume of the cylinder with a diameter of 18 m  and a height of 4 m. | | | | | | | | | | | | | | | |
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| 19. | The inside rail of a running track consists of a rectangle with a semi-circle at each end as shown in the figure below. Find the ***approximate*** area surrounded by the track rail. | | | | | | | | | | | | | | | |
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| 20. | Estimate the measure  of : | | | | | | | | | | | | | | | |
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| 21. | The height of a rectangle is 4.2 ft. The area of the rectangle is 48 ft2. Which is the closest approximation to the length of the rectangle? | | | | | | | | | | | | | | | |
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| 22. | Evyn is wrapping a box. The box is a rectangular prism 12 inches long, 10 inches wide, and 8 inches high. What is the surface area of the box? | | | | | | | | | | | | | | | |
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| 23. | A cylinder has a volume of approximately 128.8 cubic inches and a radius of 6 inches. What is its height? | | | | | | | | | | | | | | | |
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| 24. | The length of each edge of a cube is doubled. By what factor is the volume of the cube increased? | | | | | | | | | | | | | | | |
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| 25. | A sphere has a circumference of 18 π inches (in.). What is the closest approximation of the volume of the sphere? | | | | | | | | | | | | | | | |
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| 26. | The length of the base of a triangle is doubled. The height remains unchanged. By what factor is the area of the triangle increased? | | | | | | | | | | | | | | | |
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| 27. | What is the approximate volume of the figure?  *l = 5* | | | | | | | | | | | | | | | |
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| 28. | What is the surface area of a **soccer ball** whose radius is 5 inches? Round to the nearest tenth. | | | | | | | | | | | | | | | |
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| 29. | What is the Area of the shaded region? | | | | | | | | | | | | | | | |
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| 30. | Approximately, how many feet of fencing is needed to surround the garden? | | | | | | | | | | | | | | | |
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| **Part 3: Multiple Choice - Geometry** | | | | | | | | | | | | | | | | |
| 31. | A computer screen shows two points at the coordinates: P1 (12,61) and P2 (64,17). What are the coordinates of the midpoint between the two points? | | | | | | | | | | | | | | | |
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| 32. | What is the distance between the two points from #31? Round to the nearest tenth. | | | | | | | | | | | | | | | |
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| 33. | If *AD* is the diameter of the circle, *CD* is the radius and is equal to 12 inches, what is the measure of *AD*? | | | | | | | | | | | | | | | |
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| 34. | Find the measure of radius if *ST = 2x* and *XY = 4x + 6.* | | | | | | | | | | | | | | | |
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| 35. | In circle *Y*, *LN = 3x – 12* and *MO = 4x + 16.* Find the measure of the radius of the circle *Y*. | | | | | | | | | | | | | | | |
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| 36. | In Circle *A*, name the tangent line. | | | | | | | | | | | | | | | |
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| 37. | In Circle *A*, name the radii. | | | | | | | | | | | | | | | |
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| 38. | If *BC =**4*, find *CY*. | | | | | | | | | | | | | | | |
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| 39. | If *BC =**4*, find *XB*. | | | | | | | | | | | | | | | |
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| 40. | If *BC =**4*, find *AB*. | | | | | | | | | | | | | | | |
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| 41. | In the rectangle, . Find . | | | | | | | |
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| 42. | In the rhombus,  and . Find the value of *x.* | | | | | | | |
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| 43. | In the parallelogram, find the measure of . | | | | | | | |
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| 44. | In the square, diagonal *BD* is an angle bisector.Find the measure of . | | | | | | | |
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| 45. | In the rectangle, solve for *y.* | | | | | | | | | | | | | | | | | | | | | |
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| 46. | Which of the following equations is parallel to *y = -2x + 4.* | | | | | | | | | | | | | | | | | | | | | |
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|  | A. | *y = -2x + 3* | | | | | B. | *y = 2x + 4* | | | | | C. | *y = x + 4* | | | | | | | D. | *y = -x + 3* |
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| 47. | Find the slope of a line **perpendicular** to a line passing through the points (3, -2) and (1, 6)? | | | | | | | | | | | | | | | | | | | | | |
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| **Part 4: Multiple Choice – Data and Probability** | | | | | | | | | | | | | | | | | | | | | | |
| 48. | Which scatter plot best supports the conclusion that as the number of years of education increases, yearly earnings decrease? | | | | | | | | | | | | | | | | | | | | | |
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|  | A. |  | | | | | B. |  | | | | | C. |  | | | | | | | D. |  |
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| 49. | The height, in inches, of twelve 9 year olds are recorded below. Create a stem-and-leaf plot to display the data.  **43, 38, 42, 41, 40, 40, 48, 49, 50, 52, 51, 49** | | | | | | | | | | | | | | | | | | | | | |
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| 50. | What is the **median** of the set of data in the stem-and-leaf plot?  *Use for* *#50 & #51* | | | | | | | | | | | | | | | | | | | | | |
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| 51. | What is the **mean** of the data from the stem-and-leaf plot? | | | | | | | | | | | | | | | | | | | | | |
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| 52. | A bag contains ten marbles, 4 red, 3 green and 3 blue. Two marbles are randomly selected without replacement. Find the probability of selecting a **red then a blue marble.** | | | | | | | | | | | | | | | | | | | | | |
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| 53. | A box contains six red scarves and seven green scarves. A green scarf is drawn out of the box and set aside. What is the probability that the next drawn at random is a red scarf? | | | | | | | | | | | | | | | | | | | | | |
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|  | A. | 1/13 | | | | | B. | 6/13 | | | | | C. | 1/6 | | | | | | | D. | 3/7 |
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| 54. | The odds of winning a raffle are 1 in 50. What is the probability of winning the raffle? | | | | | | | | | | | | | | | | | | | | | |
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| 55. | What are the odds for picking a vowel (a, e, i, o, u) from the letters of the alphabet? | | | | | | | | | | | | | | | | | | | | | |
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| 56. | The cafeteria at your school has several different options for lunch each day. There are always 3 salads, 3 main entrees, and 5 drinks to pick from. You can mix and match these items. How many different meals can be made that each have a salad, entrée and drink? | | | | | | | | | | | | | | | | | | | | | |
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| 57. | The band director surveyed students about their favorite musical instrument. It is estimated that about 220 students chose the guitar. Based on the results shown in the pie chart, about how many students did the band director suvey? | | | | | | | | | | | | | | | | | | | | | |
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| 58. | The graph displays the population of the Class of 2013 throughout their 9th, 10th and 11th grade years.  If the trend continues, how many students will be enrolled during the 12th grade year? | | | | | | | | | | | | | | | | | | | | | |
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